



MERCER

Investment Consulting

August 15, 2003

**Total Fund Review - Second Quarter
Board Meeting**
Arizona State Retirement System

Terry A. Dennison

Los Angeles



Marsh & McLennan Companies





Economic Environment

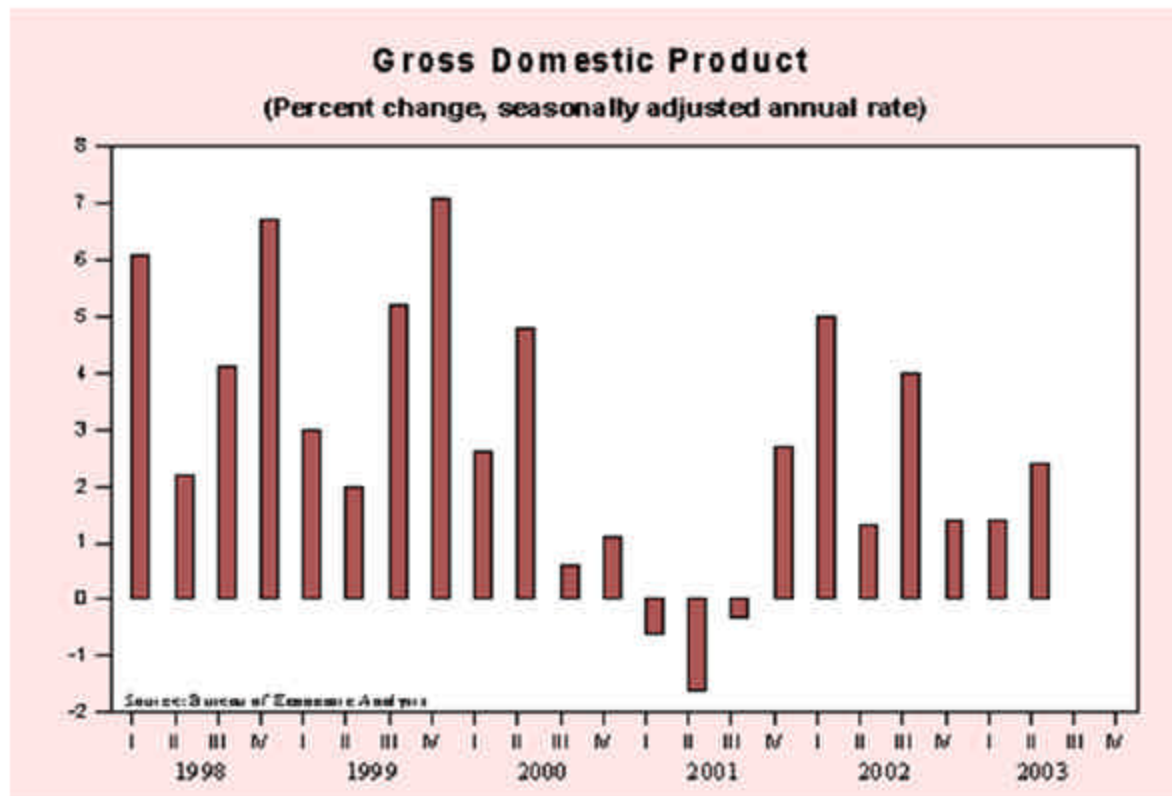
Economic Growth Develops Some Momentum

Signs Of Recovery and Optimism

- Second quarter GDP growth was 2.4%, much stronger than the 1.5% growth originally forecasted
 - Durable goods orders advanced much more than expected, up 2.1% in June
- Leading indicators signaling positive outlook, primarily due to financial indicators such as the yield curve and stock prices
- May housing starts showed strength
- Retail sales up modestly at 0.8%
- Unemployment dropped from 6.4% in June to 6.2% in July
 - June payroll data was weaker than expected and jobless claims remained high albeit with some improvement
- Fed shows its determination to prevent deflation and cuts rates an additional 25 basis points in late June

Gross Domestic Product Growth Accelerates

Second Quarter's 2.4% is Well Above Expectations



Unemployment Rate Continues to Indicate a 'Jobless Recovery'

Unemployment rate (seasonally adjusted)



Note: Cross-hatched area represents recession. Vertical line indicates a break in series in January 1994 due to redesign of the survey.

Positives for the Economy

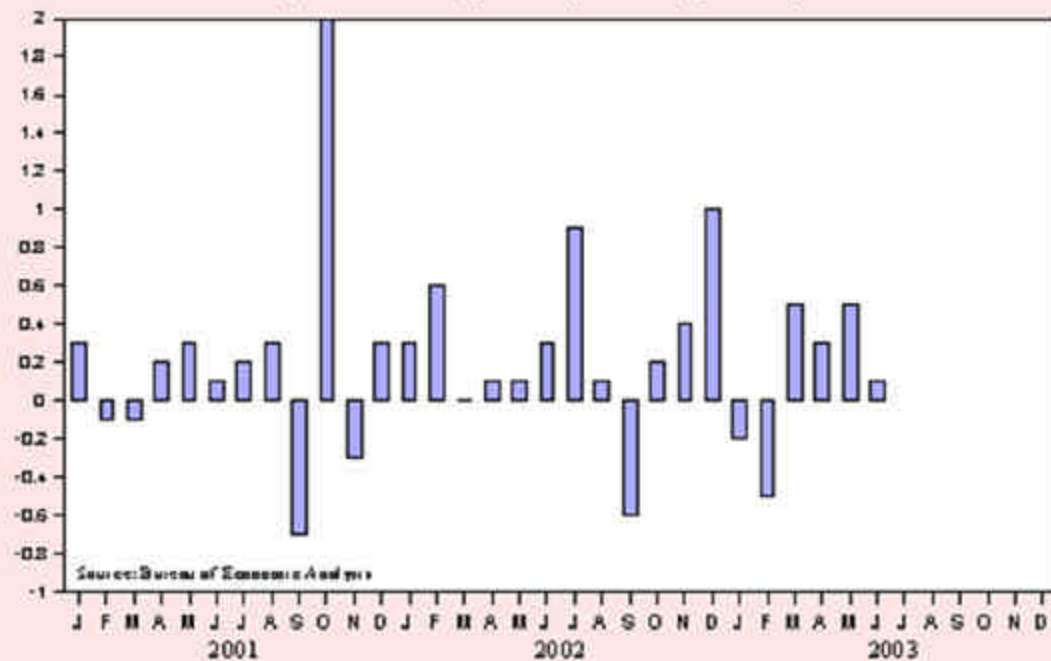
- Some recovery in corporate profit margins from recession-lows
- Quality of corporate balance sheets has improved
 - Free cash flow is at record levels
 - Cash/Total Assets is approaching 10%
- Weak U.S. Dollar should improve exports
 - Rising costs of imports, usually a generator of inflation, will have a moderate impact with inflation at low levels
 - A further positive impact: reduces deflationary forces and relieves pressure on local pricing, improving profitability
- Consumer confidence rose in April and remained fairly solid through June despite the weak labor market
 - Consumer spending declined in April, flat in May, spending then picked up in June, year-over-year increased 4.2%

Negatives for the Economy

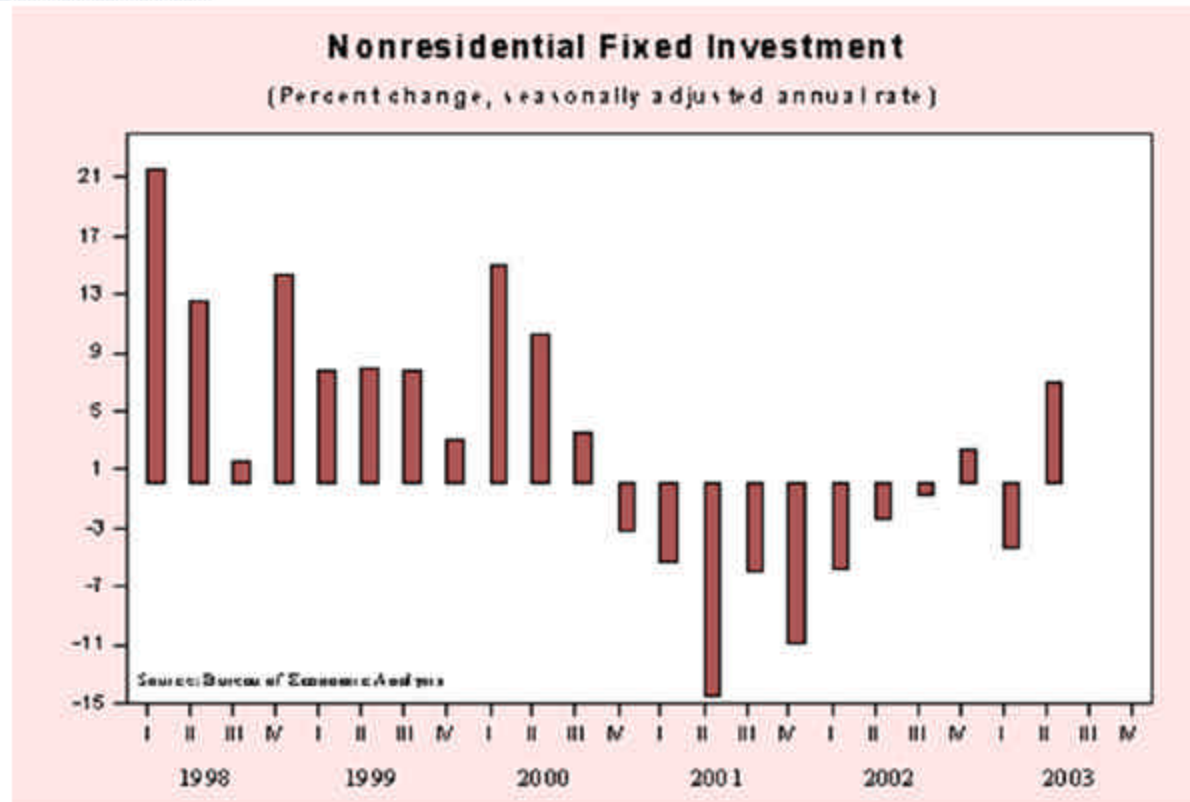
- Demand, measured by final sales, is still weak, particularly for industrial capital goods
- Capacity utilization is low, indicating that an initial increase in demand can be met without investment and hiring
- Unemployment, always sticky after a recession, remains high
- Federal deficits are growing rapidly, increasing the demand for credit and increasing interest rates
 - Rising interest rates will cut off mortgage refinancing, a substantial source of consumer liquidity
- State deficits are likely to lead to increased taxes and reducing state/local spending
- Pension costs, private and public, are a drag on finances as contributions are not available for spending or investment

Consumers are Spending Less

Real Personal Consumption Expenditures
(Percent change from preceding month)



Signs of a Business Investment Recovery, Finally!



Employment Cost Index Components Diverge

Wage Costs Are Decline While Benefit Costs Soar

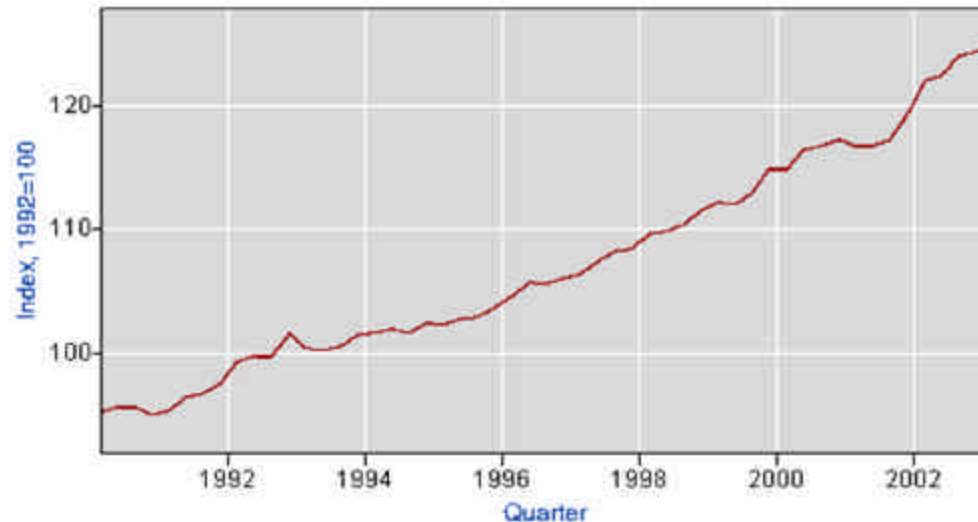
Employment Cost Index for civilian workers, Changes in wages and salaries and benefit costs



Productivity Increases Resume Trend

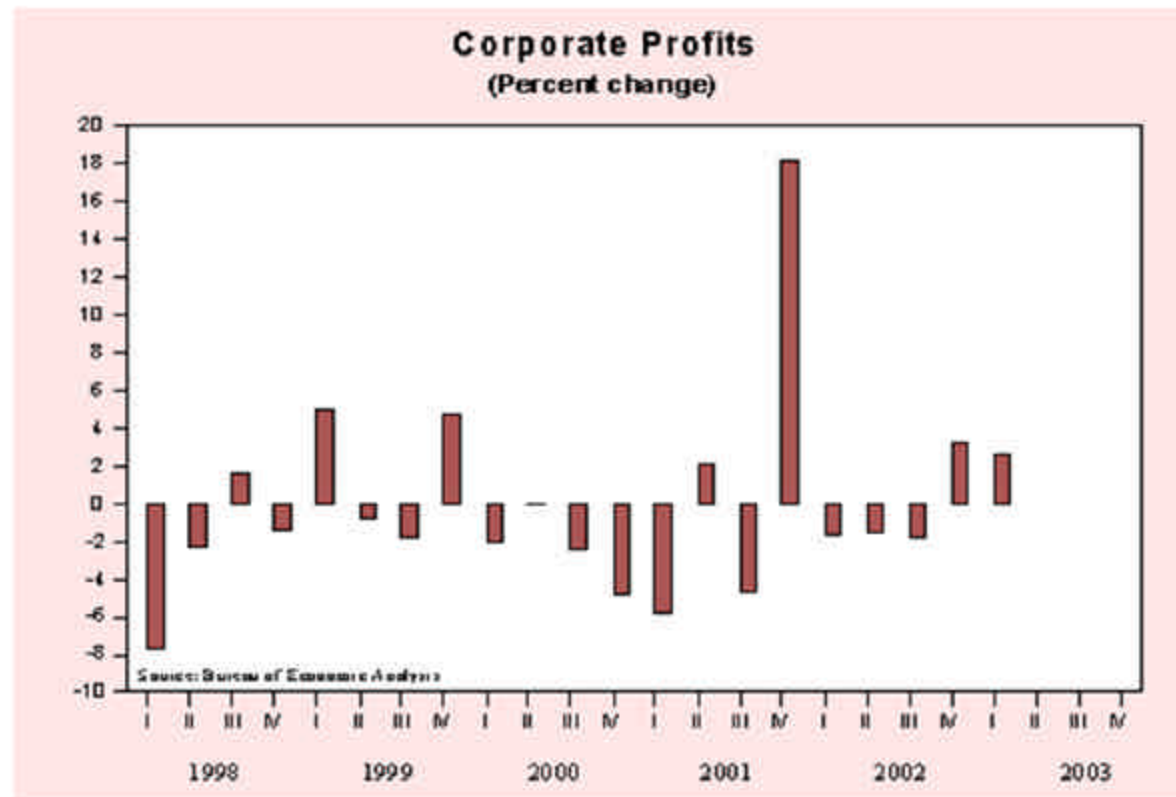
Likely to Lead to Significant Earnings Increases When Final Demand Increases

Quarterly productivity in the nonfarm business sector



Note: Labor productivity is output per hour worked

Corporate Profits Continue Upward Trend



Interest Rates Declined During the Quarter

- The Fed cut interest rates 25 basis points in June in an attempt to stave off deflation and spur the economy
 - The federal funds rate at quarter-end was 1%, its lowest level since 1958
- The yield on the 3-month T-bill ended the quarter at 0.9%, down 24 basis points since March
- The yield curve descended during the quarter as yields fell across all maturities
 - The yields on the 2- and 10-year Treasury notes fell 19 and 29 basis points, respectively
 - The 2-year to 30-year yield spread narrowed to 324 basis points during the quarter
- Interest rates, particularly for Treasuries, rose rapidly in July



Securities Markets

Domestic Equity

- Small cap and low quality issues lead market out of slump with largest gain since 1991
 - Small cap stocks rallied 23.4% while the S&P 500 moved up 15.4%
- The “riskiest” stocks, those with weaker fundamentals and lowest market capitalizations, fueled much of the Russell 2000’s rally for the quarter
 - These types of securities are not typically held by institutional investors
- Value held a slight edge among large cap issues
- Growth had a slight advantage over value within small cap stocks
- All sectors gained ground with producer durables, consumer discretionary, utilities and technology leading industry returns

Domestic Equity

Russell 1000 Sector Weights and Returns for 2Q03

Sector	Weight	Return
Technology	13.7	18.5
Health Care	15.4	11.1
Consumer Discretionary & Services	13.9	18.8
Consumer Staples	7.5	13.7
Integrated Oils	4.2	6.0
Other Energy	1.6	10.8
Materials & Processing	3.2	13.0
Producer Durables	3.6	20.9
Autos & Transportation	2.1	17.1
Financial Services	22.7	17.8
Utilities	7.7	18.7
Other	4.3	12.7

Largest Positive/Negative Contributors to S&P

S&P 500 Quarter Return: 15.39%

25 Largest Positive Contributors

Stock	Return (%)	End of Quarter Weight	Rank
CITIGROUP INC	24.82%	2.46%	6
GENERAL ELEC CO	13.22%	3.20%	1
ALTRIA GROUP INC	53.81%	1.03%	17
INTEL CORP	27.95%	1.52%	10
CISCO SYS INC	29.35%	1.31%	13
PFIZER INC	10.08%	3.01%	3
AOL TIME WARNER INC	48.16%	0.81%	27
J P MORGAN CHASE & CO	45.59%	0.77%	29
HOME DEPOT INC	36.21%	0.85%	26
SBC COMMUNICATIONS INC	29.02%	0.95%	19
BANK OF AMERICA CORPORATION	19.20%	1.32%	12
HEWLETT PACKARD CO	37.49%	0.72%	33
MICROSOFT CORP	5.91%	3.07%	2
COCA COLA CO	15.19%	1.27%	15
AMERICAN INTL GROUP INC	11.68%	1.61%	8
MERCK & CO INC	11.19%	1.51%	11
LILLY ELI & CO	21.27%	0.86%	22
VIACOM INC	19.55%	0.85%	25
VERIZON COMMUNICATIONS	12.69%	1.21%	16
TYCO INTL LTD NEW	47.68%	0.42%	51
BRISTOL MYERS SQUIBB CO	29.82%	0.59%	39
DELL COMPUTER CORP	16.59%	0.91%	21
AMERICAN EXPRESS CO	26.06%	0.61%	37
US BANCORP DEL	30.16%	0.52%	42
AMGEN INC	14.58%	0.95%	18

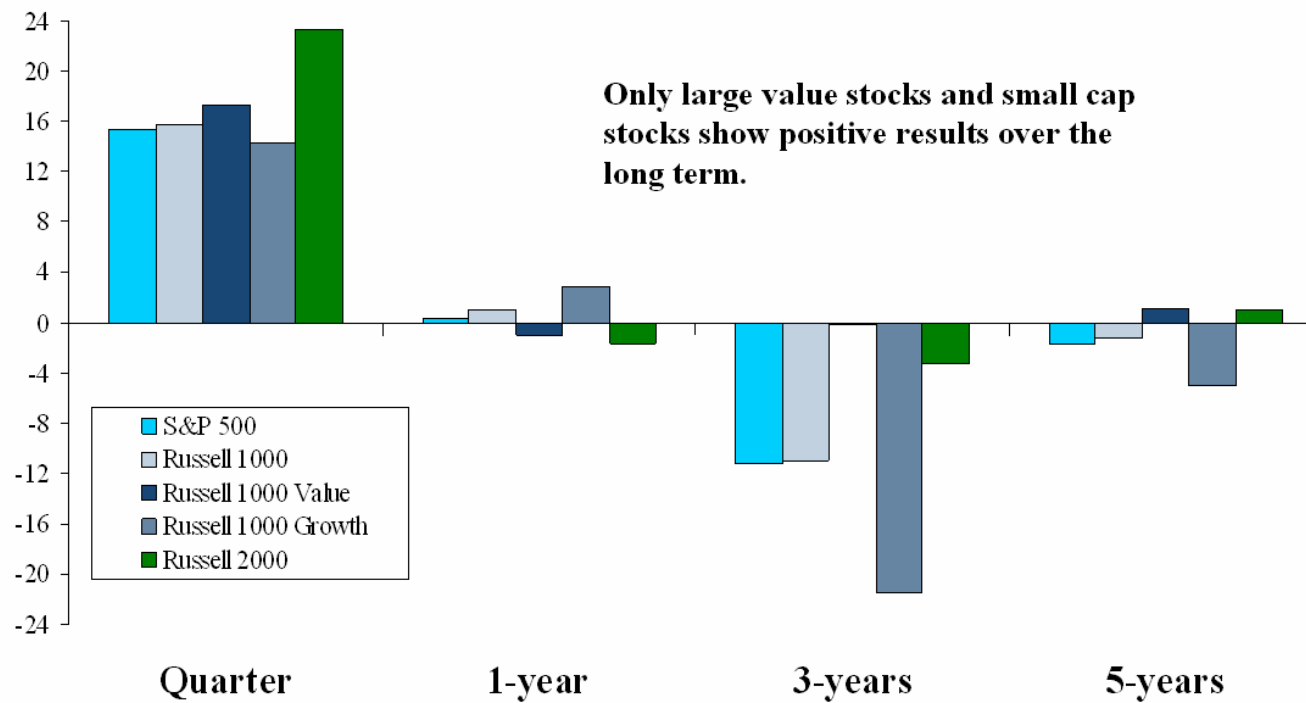
Data Source: Compustat

25 Largest Negative Contributors

Stock	Return (%)	End of Quarter Weight	Rank
JOHNSON & JOHNSON	-10.25%	1.71%	7
HCA INC	-22.49%	0.18%	115
TENET HEALTHCARE CORP	-30.24%	0.06%	318
KOHL'S CORP	-9.19%	0.19%	110
MATTEL INC	-15.91%	0.09%	232
FEDERAL HOME LN MTG CORP	-3.90%	0.39%	53
AVERY DENNISON CORP	-13.82%	0.06%	328
PENNEY J C INC	-13.57%	0.05%	345
CLOROX CO DEL	-7.15%	0.10%	201
ZIMMER HLDGS INC	-7.36%	0.10%	219
MAXIM INTEGRATED PRODS INC	-5.48%	0.12%	170
AFLAC INC	-3.84%	0.18%	120
BALL CORP	-18.13%	0.03%	427
BIOMET INC	-6.36%	0.08%	254
STARBUCKS CORP	-4.70%	0.11%	198
EASTMAN KODAK CO	-4.56%	0.09%	242
V F CORP	-9.06%	0.04%	382
ANADARKO PETE CORP	-2.04%	0.12%	169
COCA COLA ENTERPRISES INC	-2.68%	0.09%	231
3M CO	-0.30%	0.56%	40
HEALTH MGMT ASSOC INC NEW	-2.79%	0.05%	357
WINN DIXIE STORES INC	-6.51%	0.02%	468
APARTMENT INVT & MGMT CO	-2.91%	0.04%	401
PACTIV CORP	-2.91%	0.04%	408
GREAT LAKES CHEM CORP	-7.70%	0.01%	491

Report Date: July 28, 2003

Cumulative Performance is Still Weak



Every Segment of the Market Soared

- Small cap outperformed large and mid cap with mid-twenties
- Value/Growth performance varied by cap size

2Q03 Returns	Value	Core	Growth
Large	17.28	15.73	14.30
Mid	17.90	18.26	18.76
Small	22.72	23.42	24.15
Note: Russell 1000, Mid-Cap, 2000 Indices; Value, Total, Growth			

One-Year Returns Are Now Near Zero

- Large growth is the best performer
- Pattern is a reverse of the performance during the recession

1 Year Returns	Value	Core	Growth
Large	-1.03	0.95	2.91
Mid	-0.64	2.63	7.35
Small	-3.80	-1.65	0.67
Note: Russell 1000, Mid-Cap, 2000 Indices; Value, Core, Growth			

Three-Year Results Show Strength of Value Over Growth

- Returns positive only for Mid/Small Value
- Growth returns for all cap ranges are very negative

3 Year Returns	Value	Core	Growth
Large	-0.19	-11.00	-21.55
Mid	7.86	-2.02	-18.49
Small	10.93	-3.30	-16.67
Note: Russell 1000, Mid-Cap, 2000 Indices; Value, Total, Growth			

Cumulative Three-Year Returns Show the Real Effect on Wealth

- Large growth has lost more than 50% of value during the period
- Small value stocks increased by more than 36%

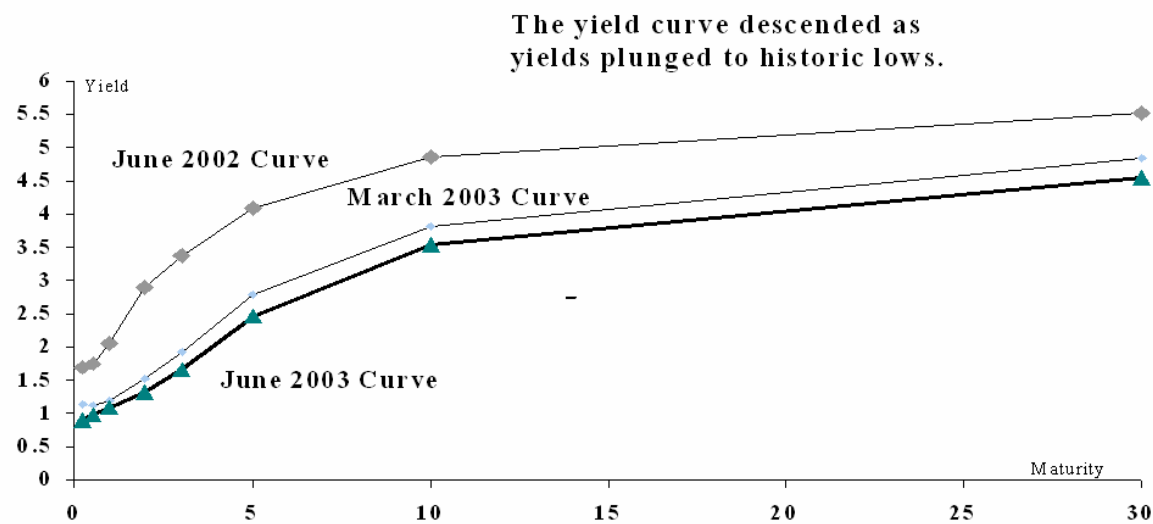
Cumulative 3 Yr	Value	Core	Growth
Large	-0.57	-29.50	-51.72
Mid	25.48	-5.94	-45.85
Small	36.50	-9.58	-42.14
Note: Russell 1000, Mid-Cap, 2000 Indices; Value, Total, Growth			

Fixed Income Markets

- Investment-grade bonds continued to post gains in the second quarter as yields fell to historic lows
 - Credit issues outperformed Treasuries and long-term maturity issues outpaced shorter-term issues
 - The Lehman Brothers Aggregate Bond Index gained 2.5% for the quarter, while the Government/Credit Index returned 3.5%
 - Lower quality bonds continued to outperform higher-quality issues
 - Lehman Brothers Treasury Index was up 2.7% for the quarter
 - Lehman Brothers Credit Index gained 4.8%
- Mortgages trailed Treasuries during the quarter as consumer prepayments hurt returns, Lehman Brothers MBS Index gained 0.7%

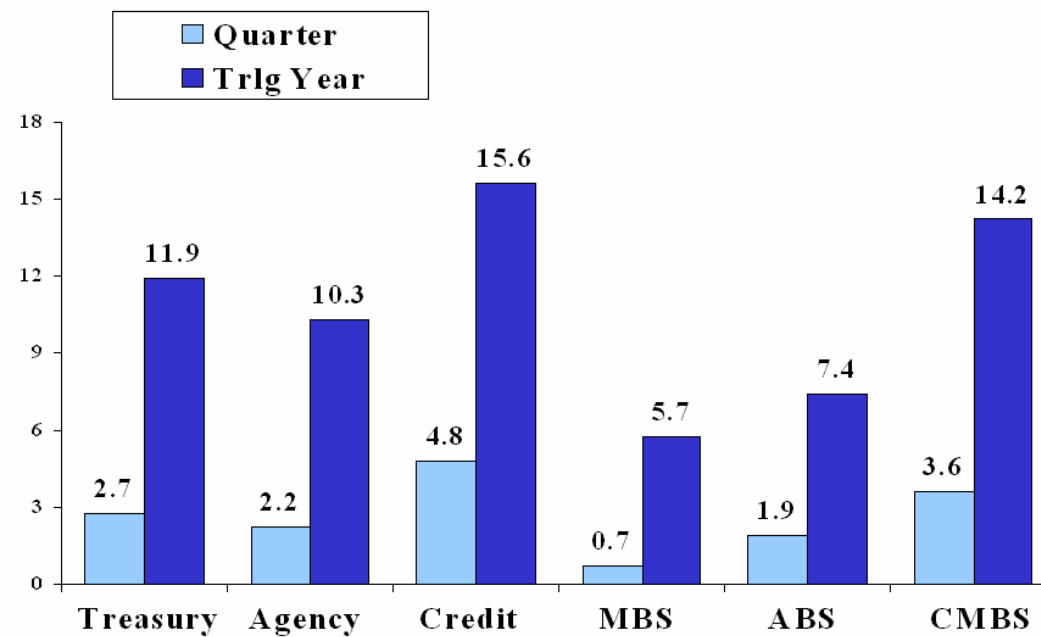
U. S. Treasury Yield Curve

Parallel Decline in Rates Across the Entire Curve



Fixed Income Returns by Issuer

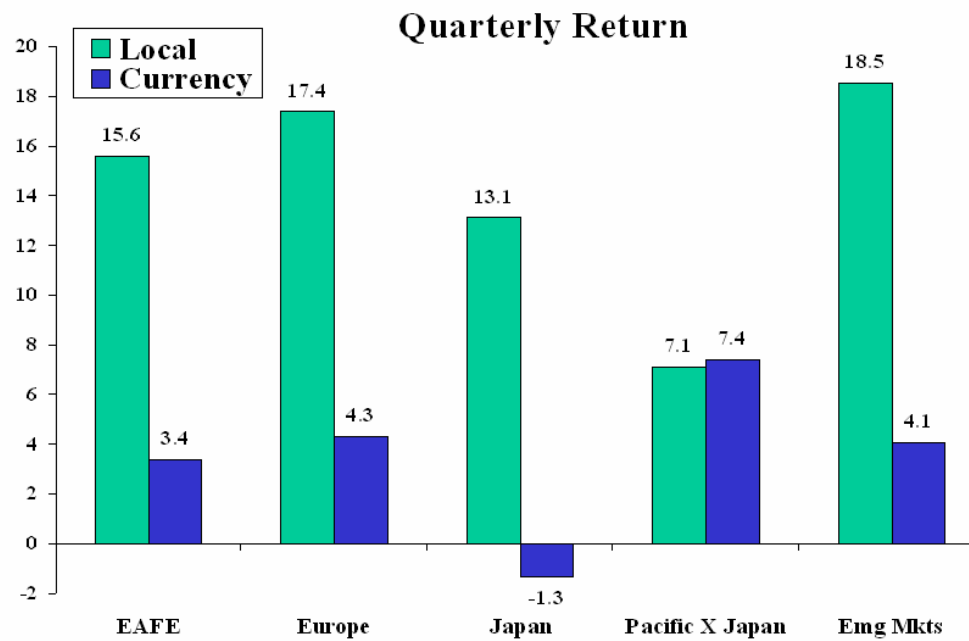
Second Quarter 2003



Non-U.S. Equity Performance

- The international equity markets rebounded strongly during the second quarter with most countries reporting double-digit gains
 - MSCI EAFE Index was up 19.6%, local terms 15.6%
 - During the quarter, the yen fell 1.3% and the euro advanced 5.2% versus the dollar
 - The Pacific region was up 12.6%
 - New Zealand and Singapore posted the best results, gaining 21.8% and 16.4%
 - Europe reported a gain of 22.4%
 - Germany posted the strongest results, gaining 38.8%, while France and the U.K. were up 26.3% and 18.2%, respectively.
- Emerging markets soared 23.4% during the second quarter as all regions performed strongly

International Market Performance Second Quarter 2003



Other Asset Classes

■ High Yield Bonds

- High yield bonds, as measured by the Lehman Brothers High Yield Bond Index, gained 10.1% during the second quarter. Long-term issues and lower quality bonds posted the best results
 - Overall, yields fell 181 basis points during the quarter. The yield spread versus comparable Treasuries decreased 166 basis points for intermediate maturities and 149 basis points for long maturity issues

■ Real Estate

- Real Estate Investment Trusts, as measured by the NAREIT Index, gained 13.1% during the second quarter
- The latest data available for the private real estate market showed a first quarter gain of 1.7% for the NCREIF Classic

Other Asset Classes

■ Inflation Indexed Bonds

- Treasury Inflation Protection Securities (TIPS) maintained their edge over Treasuries during the quarter, gaining 3.4%

■ International Bonds

- The Citigroup Non-U.S. Government Bond Index gained 4.2% in U.S. dollar terms during the second quarter. The Non-U.S. Dollar-Hedged Index was up 1.3% for the quarter
 - All countries except Japan, which lost 1.6%, advanced. France, Germany, and the U.K. gained 7.6%, 7.5%, and 6.1%, respectively
- The Lehman Brothers Emerging Markets Index continued to post strong results, advancing 10.7% during the second quarter. Latin America, up 11.5%, was the top performing region



ASRS Total Fund Performance

Total Fund Performance

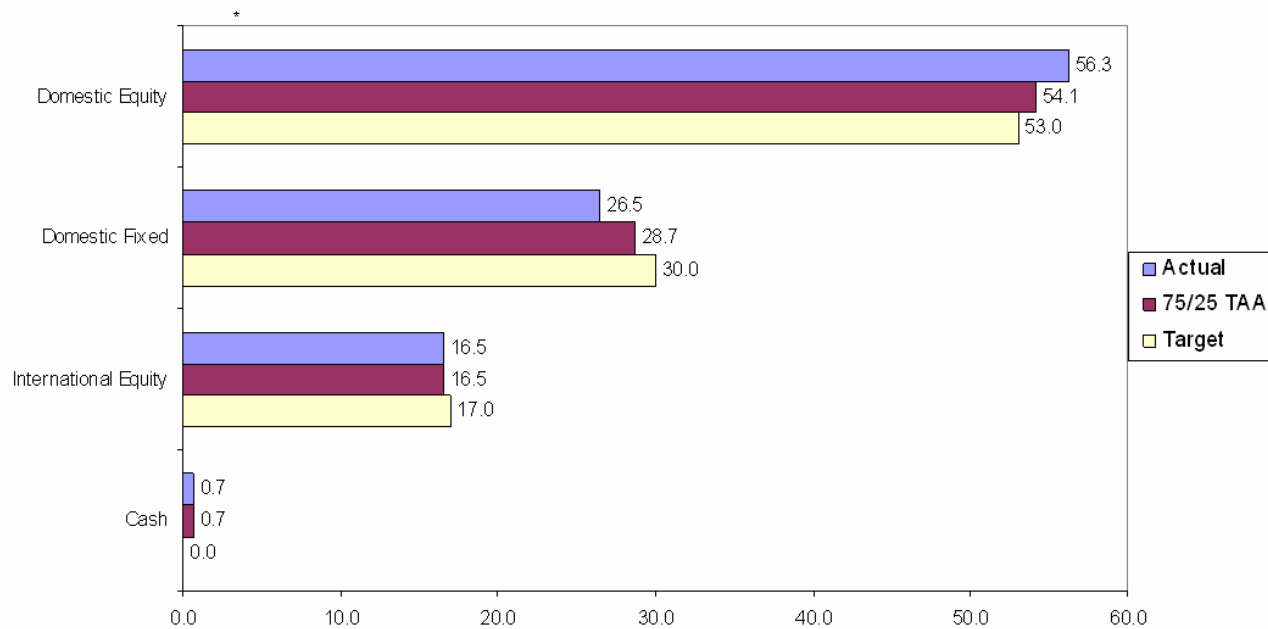
For Periods Ending June 30, 2003

	<u>Quarter</u>	<u>1 Year</u>	<u>3 Years</u>	<u>5 Years</u>	<u>Inception</u>
Total Fund	13.0%	2.4%	-4.3%	2.4%	10.7%
Benchmark*	12.1	2.6	-5.0	1.0	8.8
RM Public Funds Median	11.8	3.4	-3.2	2.7	—

*1/1/89-12/31/91 is 60% S&P 500/40% LB Aggregate,
 1/1/92-12/31/94 is 50% S&P 500/40% LB Aggregate/10% EAFE,
 1/1/95-6/30/97 is 45% S&P 500/40% LB Aggregate/15% EAFE,
 7/1/97-12/31/99 is 50% S&P 500/35% LB Aggregate/15% EAFE, and
 1/1/00-Present is 53% S&P 500/30% LB Aggregate/17% EAFE.

Total Fund Asset Allocation

June 30, 2003



* Domestic equity includes BGI TAA

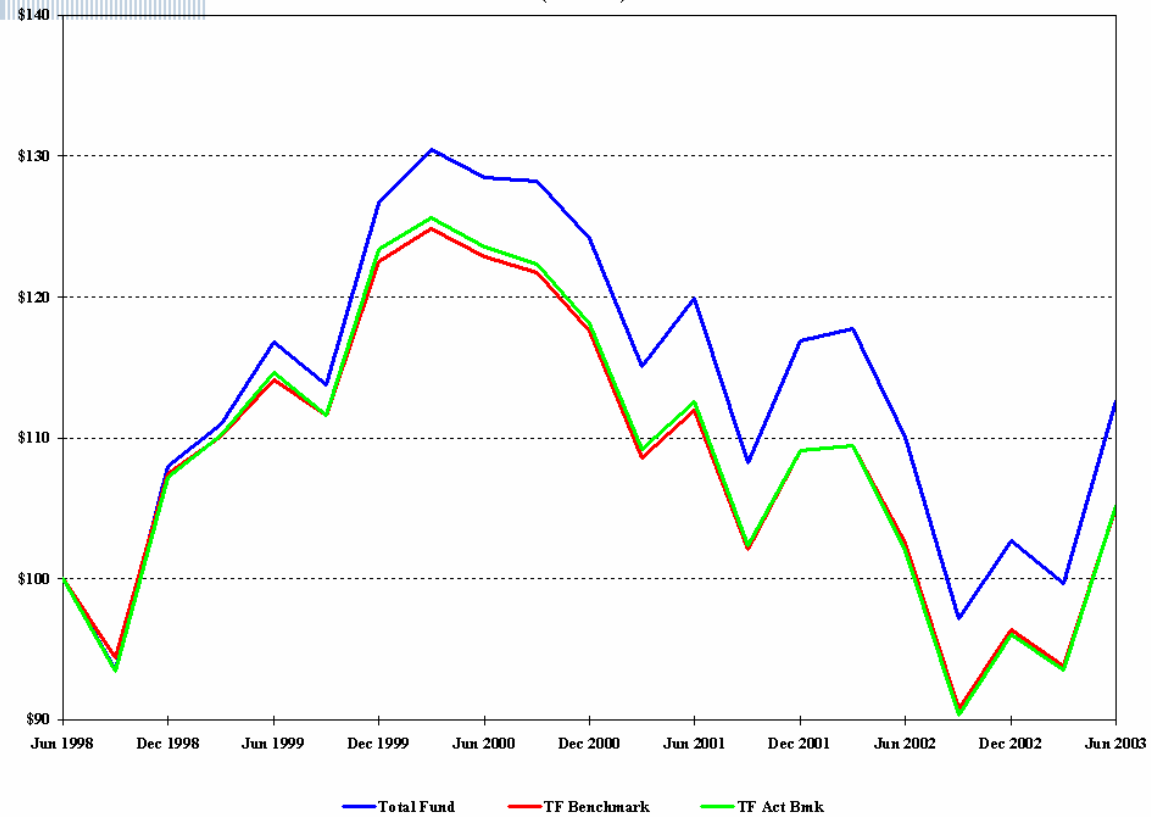
Total Fund Performance

For the Year Ending June 30, 2003

- Measured against:
 - Asset Allocation Target of 8.5% Annually
 - Total Fund has underperformed by 6.1%
 - Inflation + 3.0% annually
 - Total Fund has underperformed by 2.7%
 - Actuarial assumption rate of 8.0% annually
 - Total Fund has underperformed by 5.6%

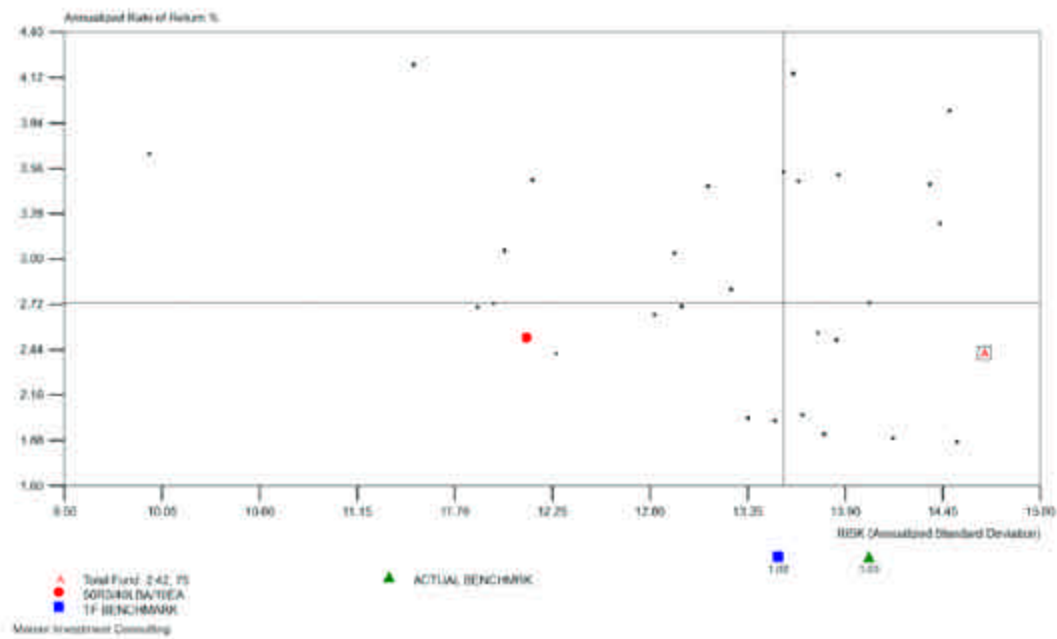
Total Fund Growth

Total Fund
Value of \$100 invested in US Balanced from Jul 1998 to Jun 2003
(before fees)

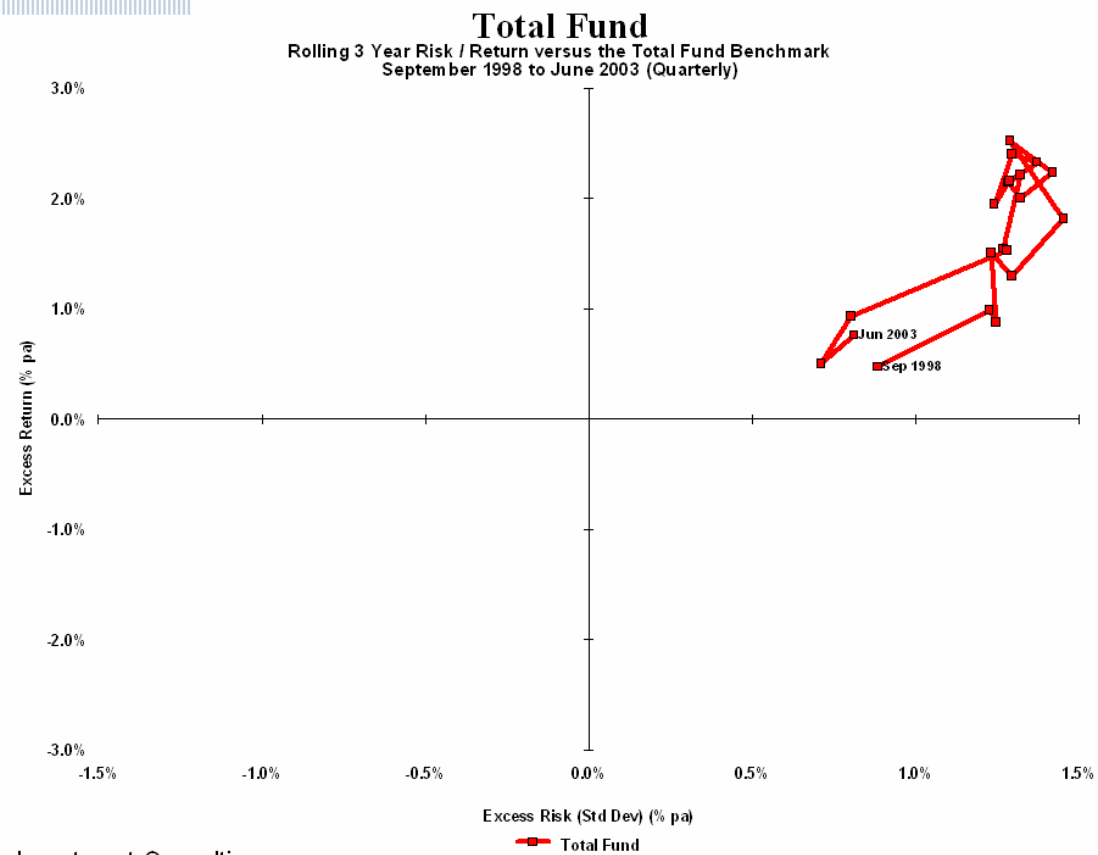


Total Fund Return/Risk Analysis

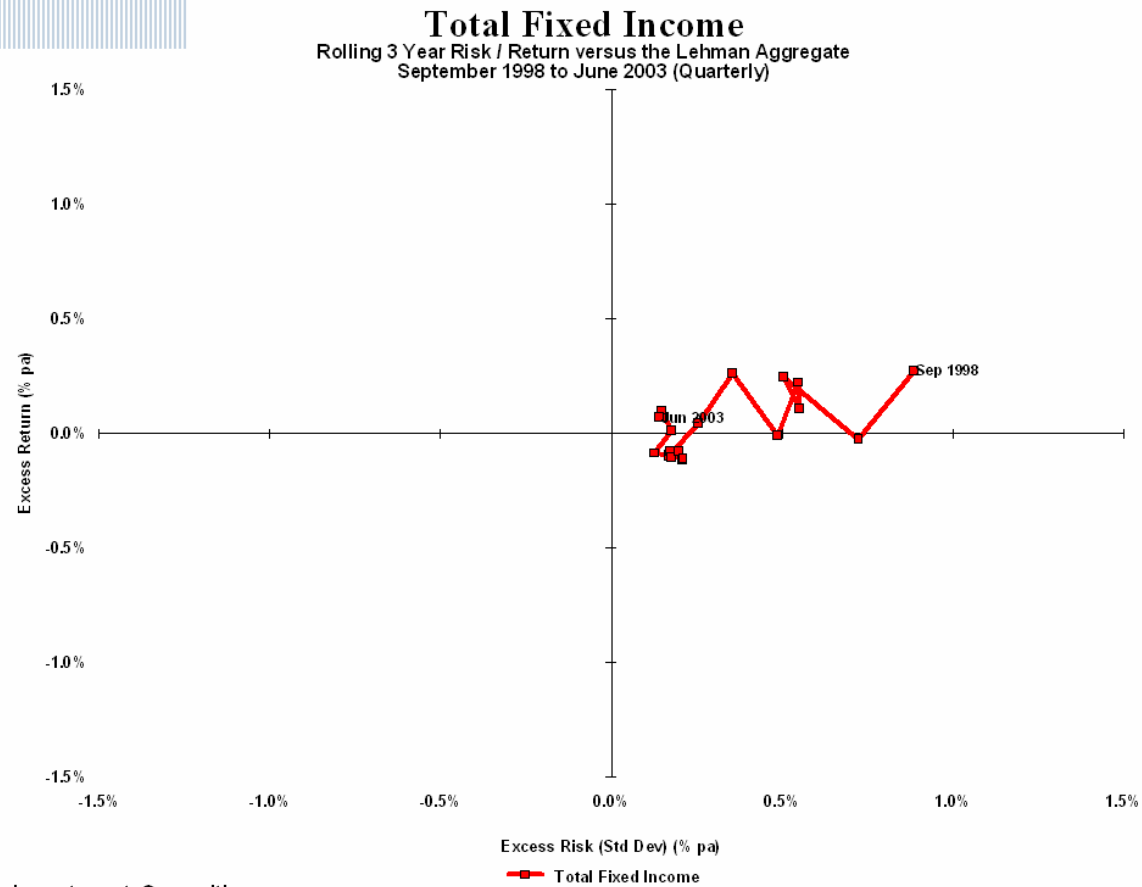
Total Funds Billion Dollar - Public
Risk-Return Comparisons
5 Years Ending June 30, 2003
29 Portfolios



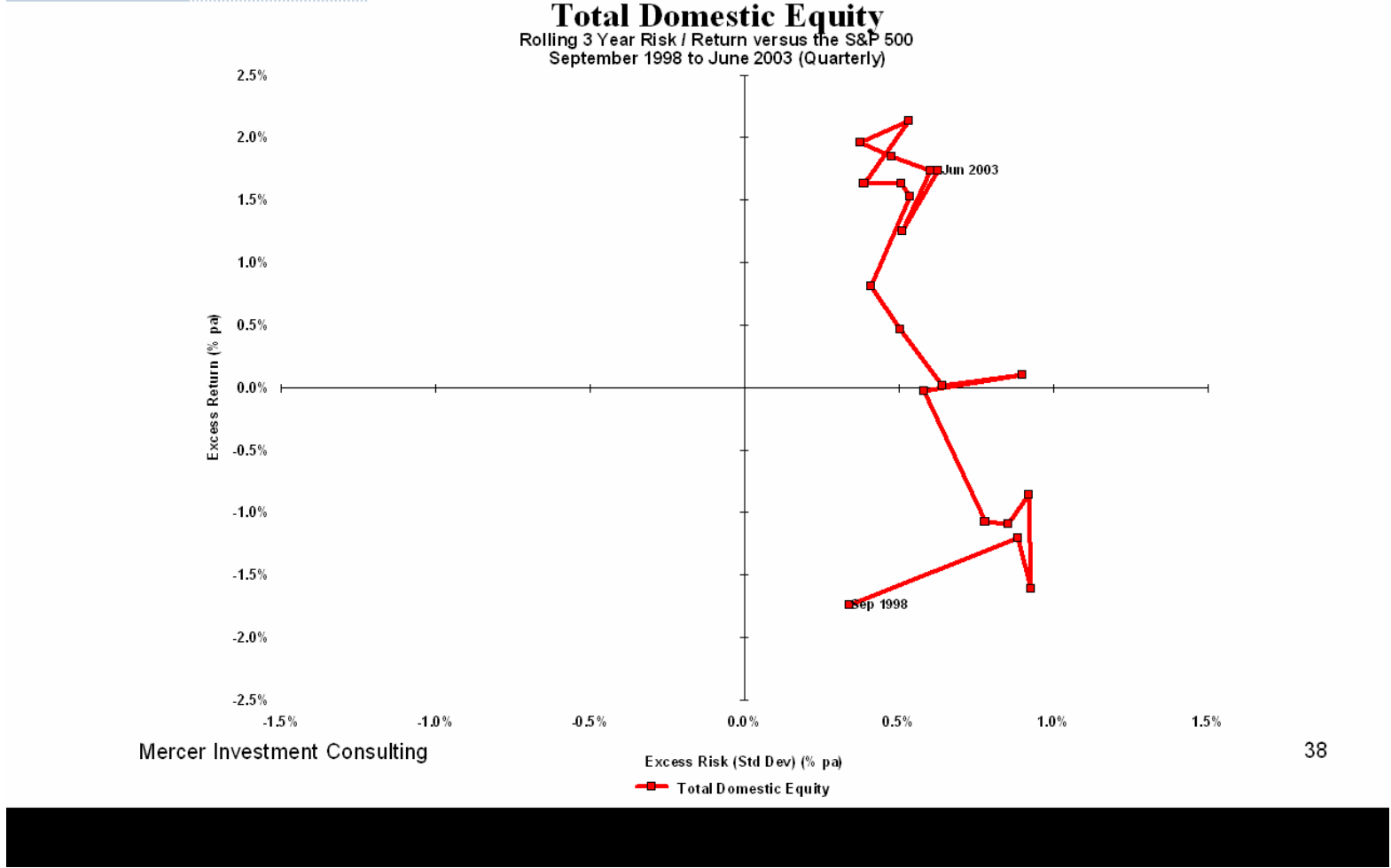
Risk/Return Analysis



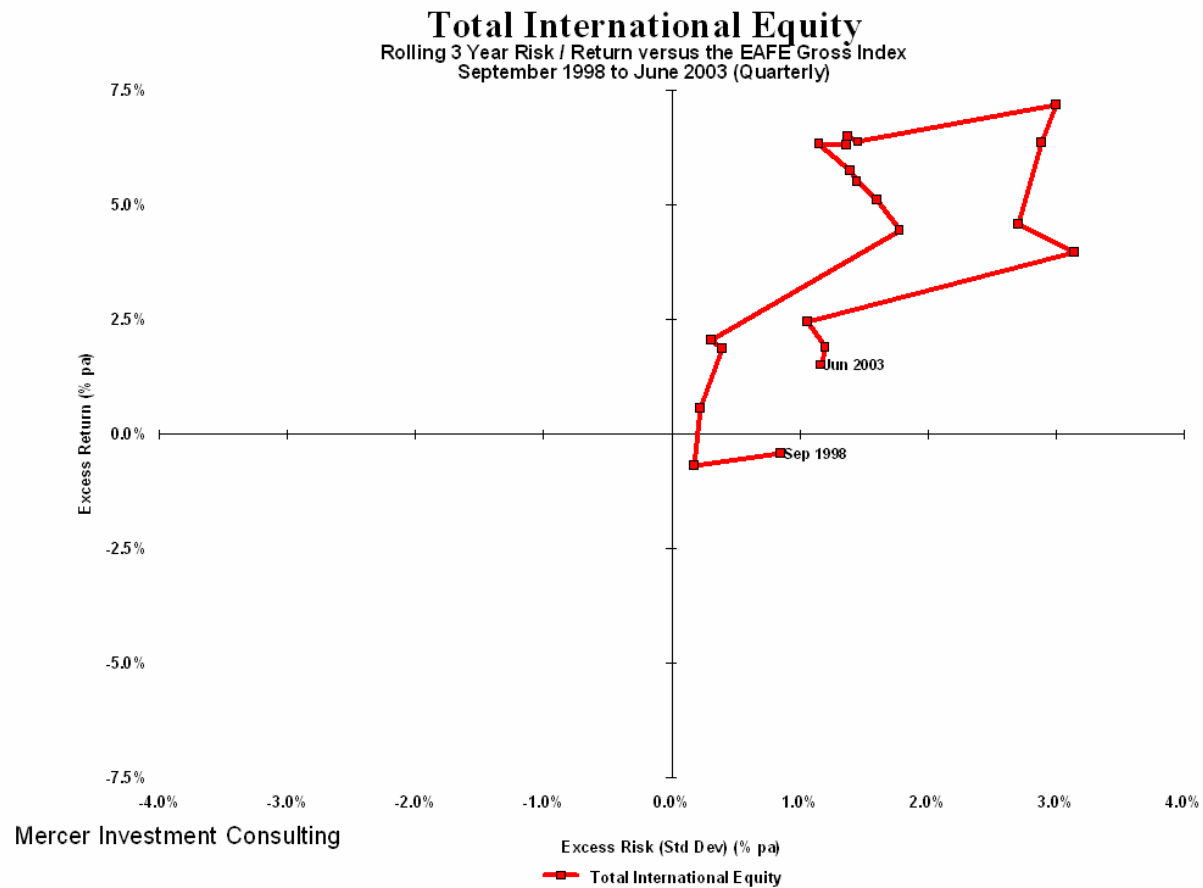
Return/Risk Analysis



Return/Risk Analysis



Return/Risk Analysis



Performance vs. Benchmarks

For the 3 Years Ending June 30, 2003

	<u>Return</u>	<u>Assumed ROR</u>	<u>Std. Dev.</u>	<u>Assumed Std. Dev.</u>
Total Fund	-4.3%	8.4%	15.0%	11.8%
Benchmark	-5.0		14.2	
Domestic Fixed	10.2	5.6	3.5	5.3
LB Aggregate	10.1		3.4	
Domestic Equity	-9.4	9.4	22.3	16.3
S&P 500	-11.2		21.7	
Intl. Equity	-11.7	10.0	22.7	21.5
EAFE	-13.2		21.6	

Performance vs. Benchmarks

For the 5 Years Ending June 30, 2003

	<u>Return</u>	<u>Assumed ROR</u>	<u>Std. Dev.</u>	<u>Assumed Std. Dev.</u>
Total Fund	2.4%	8.4%	15.1%	11.8%
Benchmark	1.0		13.9	
Domestic Fixed	7.5	5.6	3.8	5.3
LB Aggregate	7.5		3.6	
Domestic Equity	-0.4	9.4	22.4	16.3
S&P 500	-1.6		21.8	
Intl. Equity	0.2	10.0	23.9	21.5
EAFE	-3.7		22.2	

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